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DISASTER PLANNING, EMERGENCY MANAGEMENT
AND CIVIL PROTECTION: THE HISTORICAL
DEVELOPMENT OF ORGANIZED EFFORTS TO PLAN
FOR AND TO RESPOND TO DISASTERS

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PROTECTION: THE HISTORICAL DEVELOPMENT OF ORGANIZED EFFORTS
TO PLAN FOR AND TO RESPOND TO DISASTERS***

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INTRODUCTION

The human race has been faced with natural disasters since it has evolved. In more recent times it has had to contend also with technological disasters. Our interest is in how human beings have organized themselves collectively to deal with such threats and damages to their lives, property and their everyday routines. More specifically, in a selective fashion we discuss how societies and their subdivisions (particularly at the local community level) have in the past and now prepare for and respond to natural and technological disasters.

As we will see, complicating our presentation is that there is not much agreement even on the label designating these social arrangements. While "**civil protection**" is a term widely used in Europe, in many other countries around the world, the organized efforts to cope with threats to local communities are called "**emergency management**" or "**disaster planning**." There is a substantial but not complete overlap in the referent among these three terms, so we will examine what has been and is done under all these three labels. Also, we will specifically examine the relationship between the phenomena called "**civil protection**" and "**civil defense**," the last being a term usually applied to nonmilitary preparations for civilian involvement in wartime situations.

Even more important, it is only in the last two decades or so that many similarities have emerged in the structures and functions of the organizations involved in such efforts. Before this, there were relatively few common or prevailing organizational patterns. This is mostly because the social evolution of civil protection, emergency management, and disaster planning, has been very uneven and rather diverse around the world.

Given the social dynamics involved, our remarks cover five topics. *First*, we discuss how the human race historically has been slowly changing its perception of the major source or origin of disasters, including the increasing importance of the social science view of the phenomena. This is followed, *second*, by our generalized although selective description of the attempted collective responses through history to certain kinds of disastrous occasions and happenings. In our *third* section, we examine the complex relationship between civil protection and civil defense. *Fourth*, we describe the major characteristics of current organized social efforts to deal with disasters. *Fifth*, and last, we project the social trends that are changing the nature of disasters and our understanding of them, and that consequently have implications for civil protection in the future.

Our descriptions and analyses are drawn primarily from historical accounts and documentary sources. For our purposes, these were generally adequate. As a result of the *Yokohama Conference of 1994*--marking the midpoint of the *U. N. International Decade for Natural Disaster Reduction*--many countries produced documents on the current status of their civil protection programs and organizations. Also, many disaster oriented governmental bureaucracies have produced reports on their recent and present activities, although they are often archived in arcane and obscure places. Fortunately, numerous of these documents and reports were available in the Disaster Research Center (DRC) library.

However, historical documentation about the evolution of civil protection was not always easy to obtain. An extensive computer and library search failed to locate any general history, popular or

scholarly, on such developments through time. On the other hand, there are specific reports on the historical evolution in particular societies (e.g., Battisti 1978, 1991 and Baldi 1995 on Italy; Kreps 1990 and Waugh 2000 on the United States; Dye 1995 on France; Porfiriev 1998 on the Soviet Union and Russia). It was also very difficult to obtain information on the historical evolution and to a lesser extent the current status of civil protection in many developing countries. We attempted to fill these lacunae by contacting researchers knowledgeable about the current situation in such areas as Latin America, Asia and Africa. But given what we obtained, we have classified our analysis as a selective view since there are aspects about which our knowledge is far from complete.

There is a somewhat separate literature on civil defense, that is, war oriented organizations and programs. The quantity and quality of these sources are similar to the civil protection literature. That is, the literature is more numerous, better, and more easily available for the current situation and for developed countries, and weaker or incomplete for the historical picture and for developing societies.

The summaries of the disaster research findings we present are drawn from various sources in the social science literature, usually general discussions (Bolton 1986; Drabek 1986; Dynes, de March and Pelanda 1987; Auf der Heidi 1989; Rosenthal, Charles and Hart 1989; Disaster Assistance 1991; Drabek and Hoetmer 1991; Perry 1991; Aguirre 1993; Nigg 1993; Petak 1993; Cutter 1993; Dynes 1994, 1995; Dynes and Tierney 1994; Oliver-Smith 1996; Sylves and Waugh 1996; Quarantelli 1998; Mileti 1999; Tierney, Lindell and Perry 2000; Rosenthal, Comfort and Boin forthcoming). Uncited statements about social behavior can be taken as being drawn from these sources.

I. THE PERCEIVED BUT CHANGING ORIGINS AND SOURCES OF DISASTERS

We first consider the question of how disasters are visualized. This obviously is related to the matter of how to react to such phenomena. For example, certain conceptions, such as that disasters are inflicted by supernatural forces, imply that to prevent or weaken them, steps of a religious nature have to be taken. In contrast, if human actions directly create disastrous occasions, a view frequently taken about technological disasters, prevention of such happenings implies improving the performance of the actors involved. One way or another, the visualization of the ways that can be taken to prevent or to respond to disasters, depends on the perception of the dynamics of the phenomena in the first place.

As anthropologists have long pointed out, societies have evolved distinctively different collective stances and attitudes about the risks they face. These can be categorized in three ways, at least in ideal typical terms, that is, if the phenomena existed in pure form. Cultures may have: a) a fatalistic acceptance regarding whatever may threaten or occur; b) a belief that whatever happens, while unavoidable, can be adjusted to or coped with to some degree; and c) the idea that the threat can be if not prevented at least largely mitigated to a considerable extent in the first place.

The history of the perception of the major source or origin of disasters has roughly followed in a very broad chronological order the three indicated possibilities

A rather fatalistic view about disasters prevailed in prehistory and much of early historical time up to about two centuries ago. They were primarily seen as the results of astrological or supernatural forces. This is illustrated by the fact that the word "disaster" etymologically entered the English language from a word in French (*desastre*) which in turn is a derivation from two Latin words (*dis*, *astro*), which combined roughly meant, formed on a star. So, in its early usage, the word had reference to unfavorable or negative effects, usually of a personal nature, resulting from a star or a planet. So we have Shakespeare, in 1605, writing in the play, *King Lear* that "we make guilty of

our disasters the sun, the moon and stars" (Act 1, Scene 2). And Sir Slingsby writing in his diary in 1684 that "I am very ill of a disaster upon my stomach."

In time, the word disaster was applied more to major physical disturbances such as earthquakes and floods, or what came to be traditionally known as actions attributable to the supernatural. In time, disasters were eventually and formally labeled in the legal system of many countries as **Acts of God**, with the implication that nothing could be done about their occurrence. Such a fatalistic attitude or cultural value does not encourage the development of new social groups or arrangements to adjust to or deal with disasters.

However, with the development of secularism especially in Western Europe and the accompanying development of science as another way of obtaining knowledge, a different perception of the source of disasters emerged. They were increasingly seen as **Acts of Nature**. In a sense, responsibility was shifted from the scared toward a secular view of phenomena. As Steinberg notes:

For the concept of a natural disaster to take hold, people had to internalize their fears of calamity while forsaking their own or God's role in the destruction. To understand why natural disasters . . . have come to be seen as chiefly beyond human control it is necessary to explore how nature trumped God and man in the metaphysics of causation (2000: 4-5).

Thus, changes in plate tectonics, for example, were interpreted as the source of earthquakes. Now in this framework, disasters could not be eliminated or prevented. But the greater understanding of what was supposedly involved, encouraged the taking of actions that could weaken the impact of many disasters. In particular, engineering measures such as strengthening buildings, constructing dams and levees, and taking other structural measures would make much sense. In this general view about the basic source of disasters could itself not be directly controlled, nevertheless steps could be taken to lessen the negative effects of the ensuing disastrous occasion.

However, the shift to a focus on **Acts of Nature**, latently set the stage for an even more drastic shift in perception. As Voltaire said about the large casualties and losses in the 1755 Lisbon earthquake, it should not be perceived as an **Act of God**, but as resulting from building without heed in a highly seismic zone in Portugal (Dynes 1999). Implicit in such a statement is that nonstructural measures such as decisions not to build at all in vulnerable localities, would be a way to cope with possible disasters. In this general view about the basic source of disasters, while the natural hazard itself, such as cyclonic winds or volcanic eruptions, could not be directly controlled, steps nevertheless could be taken to lessen the negative effects of the ensuing disastrous occasion.

Given what has just been said, it is not surprising that a still different view of the source of disasters appeared. Just as **Acts of God** was displaced by **Acts of Nature**, the stage was set for the displacement of the latter by another view, which was that disasters resulted from the **Acts of Men and Women**. At least two trends affected the development of this new perception.

Of secondary importance was the slow appearance of disasters resulting from technological accidents and mishaps. Almost by definition these disasters were seen as resulting from the actions, or perhaps better, inappropriate actions of human beings. This being the case, the assumption was that these kinds of disasters resulting from human action could be prevented and/or their negative effects mitigated or reduced. To the extent that his view spread, it eventually spilled over as a possibility for all kinds of disasters.

However, far more important was the new orientation to disasters developed by social scientists. Their study started to gather strength about a half century ago, right after the end of World War II. There had been earlier research such as by Stierlin (1909) in a doctoral dissertation which reported on the psychological consequences for survivors in a mining disaster and in the Messina earthquake of 1908. Also, Robertson (1907) looked at how an earthquake in California created "mental and nervous diseases." But these were isolated studies that produced no follow up research by others. This also true of the later empirical work by Prince (1920) which looked at the Halifax, Canada explosion and was written within a sociological framework, as was the more theoretical essay by Carr (1932), and the speculative treatise by Sorokin (1942). However, around 1950 there was the start of systematic research building on previous work by other social scientists. This research not only characterized the basic nature of disasters, but also differentiated them from related kinds of social crises.

As a result of now half a century of study, we have increasingly come to see disasters not as **Acts of God**, or **Acts of Nature**, but as resulting from the **Acts of Men and Women**. That is, the view developed among scholars and researchers on the topic, is that disasters result directly and indirectly from the actions, intended or otherwise, of human beings. If people are living in unprotected flood plains, in non-earthquake proof buildings in known seismic zones, or next to chemical plant complexes, they are creating the necessary conditions for a hazard to generate a disaster. It is in this sense that many argue that disasters are inherently social phenomena; an earthquake for instance is but a physical happening that does not have any social consequences unless there are human beings who by their decisions and actions create built environments that can be impacted. A hazard at most can only set the stage for an actual disaster; a disaster as a social happening is both created by and manifested by dysfunctional human and group behaviors.

The same perspective becomes even stronger if the level of analysis is raised from behavior to social systems. Using Pelanda's (1981) terms, disasters can be seen as manifestations of the social vulnerabilities of societies. In other words, their origins are in the structural and cultural dimensions of social systems. Taken to its logical conclusion, this approach can say that:

in a very real sense, sociocultural systems arise to prevent or control disasters and crises that threaten the survival and well being of human population . . . disasters occur when one or more of the sociocultural systems that a population depends on fail to provide an adaptation to the environmental conditions which surround it, or when one of these systems produces, from within its own technological order, an event that threatens the population. The problem of understanding disasters then amounts to understanding the relationships between particular types of human systems and the environmental conditions to which they are related as adaptive devices (Bates and Pelanda 1995:149; see also, Pelanda 1981; Bates 1989).

Implicit in this formulation, which might be categorized as **Acts of Society**, different actions are called for than have to be undertaken if disasters result from the **Acts of Men and Women**. Attempting to change the decision making and behaviors of human beings is one thing. Making changes in the very structure of social systems is a rather different matter.

However, as some sociologists have noted, if we now perceive disasters as resulting from **Acts of Society**, we may partly be back to the original attitude about the source of disasters. Interpretations of the French sociologist, Emile Durkheim (whose work on this was reprinted in 1995), see him as

saying that humans in creating the supernatural are simply objectifying social forces, and ultimately, society.

Irrespective of that, the organized efforts to deal with disasters have been markedly affected by the recent view that they result in one sense from human actions. As our colleague, Russell Dynes has noted, if disasters are **Acts of God**, then a fatalistic attitude is proper. If disasters are **Acts of Nature**, then attempting engineering solutions is appropriate. However, if disasters are **Acts of Men and Women or Society**, then taking social actions is the course of action to follow. (we will not follow up here that the implications of the last two views are not the same as alluded to above).

However, there are other problematical aspects of society which might require social actions. In this matter social scientists have tended to think along the following lines.

In almost any sense, there is nothing new about disasters. Since the appearance of human beings and their communities, they have been faced with myriad risks and dangers, both to individuals and/or communities. Most of these threats never generate anything, let alone disasters. Others of the potential risks only affect a few persons or households, and never significantly impact any larger collectivity.

However, long before the social sciences ever existed, human societies were aware that occasionally there were massive and relatively sudden disruptions of human life. Social scientists used that observation when they started their studies to differentiate disasters from other crisis and problematical aspects of community life. Thus, they saw *disasters* as different from chronic and everyday *social problems*. Disastrous crises are marked by a sense of urgency, a need for a prompt reaction, and for quick action to prevent a further immediate, often instant, deterioration of the situation. They stand in contrast to more diffuse and continuous social pathologies such as poverty, unemployment, crime, drug use and other similar negatively viewed phenomena that sociologists usually treat as part of the social problems of a society. As Stallings (1995) recently showed especially with respect to earthquakes, disasters in the main are not defined as social problems either by policy makers or citizens at large; instead as many scholars have pointed out, they are best viewed for research purposes as rooted in the macro level processes of social changes or societal development (Quarantelli 1995a).

There is still a difference of opinion on whether to treat conflictive types of happenings such as wars, riots and civil disturbances, terrorist attacks and hostage takings, and ethnic cleansings and massacres and pogroms as instances of disasters. The dominant view among researchers in the area is that such happenings differ fundamentally from disasters in that in conflict situations, one or more of the involved parties are consciously attempting to continue the crisis or to make the occasion worse for some participants. While conflictive aspects may appear in the later stages of disaster occasions, all those initially involved are interested in bringing the crisis to an end as quickly as possible, a contrast to conflict situations. This growing distinction between *conflict* and non-conflict or *consensus* type crisis situations parallel the growth of such a conceptual differentiation in the social sciences for other kinds of social phenomena (e.g., see McCarthy and Wolfson 1992 regarding social movements).

However, there is strong agreement among interested scholars that both conflictive situations and consensus disaster occasions are subtypes of what the sociologist, Barton (1970), three decades ago called *collective stress situations*. To that extent there should be common elements. Yet up to now these commonalities have not yet been well identified because the few direct comparative studies on this issue, have found more differences than similarities (e.g., Quarantelli 1993). Also,

the new concept of *complex emergencies* primarily developed by international disaster relief organizations, and focusing on mass refugee movements generated by civil strife such as we saw recently in Bosnia and Rwanda, poses problems of theoretical placement for researchers of collective stress situations. Our current reaction is that such "emergencies" are different in major respects from "disasters" as these are understood by most students of the latter phenomena. Some international disaster relief experts also take the same position.

There is also strong agreement that it is not possible to identify disasters in terms of the natural or technological agents that might be present (e.g., Perry 1985; Bolton 1986; Quarantelli 1991; Towfighi 1991). Early efforts to differentiate natural and technological disasters from one another, have mostly disappeared in face of much empirical research evidence that this is not a meaningful distinction for planning and managing purposes. For instance, what will motivate people to give credence to warning messages, what kinds of warning messages will be effective, etc., does not depend on the specific type of agent involved. In general, a disaster is fundamentally a social happening. It should be noted that sometime there is no identifiable agent in the situation such as in a famine. Sometime there is only a rumor or false report about a threat that has negative consequences for individual and group behavior, as happened in Ecuador recently upon an internet-inspired report of an oncoming earthquake. And in current times there are computer system failures resulting in disastrous consequences that can stem from different agents as well as non-agent identifiable sources.

Disasters do differ from one another. However, it is along other non-agent dimensions that affect responding behavior. Thus, it would be whether the disaster allows forewarning or not (e.g., earthquakes and most chemical explosions do not) or whether they are of short or long duration in impact (e.g., tornadoes compared to most floods, or radioactive contamination that is more similar in length to the latter rather than the former). Yet these differentiations are not specific to any particular agent.

Some have questioned whether a generic or all-hazards approach is applicable to all phases of disasters. However, even mitigation and recovery processes are less agent specific than is often thought (see discussion of this in Quarantelli 1992). For example, with respect to mitigation, the general kinds of bureaucratic arguments advanced for a physical or technical solution to potential disaster problems, the social sources of support and of resistance in the governmental and private sector to such measures, citizen views of the legitimacy and acceptability of the planning suggested, and willingness to put preventive measures on a political agenda, show considerable similarities irrespective of the particular disaster agent involved. Similarly, what researchers have found about the nontechnical difficulties in implementing earthquake mitigation measures (see Drabek, Mushkatel and Kilijanek 1983), are not that different from the problems involved in instituting hazardous chemical disaster preventive measures (see Tierney 1980). Put another way, very many human, group, organizational, community and societal aspects of disaster mitigation planning, are generic rather than agent specific.

It would be very incorrect to pretend that the average person has totally and completely accepted the social science view of disasters. Studies show that all four conceptions of disasters are held in varying proportions and sometime together by different segments of the population. In fact, a Gallup poll in 1993 found that 18 percent of those surveyed agree that "The recent floods in the Midwest are an indication of God's judgment on the people of the United States for their sinful ways" (Reported in Steinberg 2000: xxi). Nevertheless, it is clear that the secular view of disasters has been largely accepted by most governmental officials and political elites almost everywhere. This affects the disaster policies and programs that have been put in place.

III. EVOLUTION OF COLLECTIVE RESPONSES

The change in the perceived general source of disasters-- from the supernatural through nature to social actors (human beings or society)--has been somewhat paralleled by changes in the attempted collective response

Fatalism usually breeds inaction. We should note, however, that even in the most fatalistic of cultures, human beings have not felt totally unable to act in the face of possible threats. Rituals of various kinds, symbolic offerings, prayers and sacrifices have been and still continue to be typical ways of trying to deal in some way with the appearance of disasters. Religion as a social institution does partly represent a collective response to threats in the social arena. Furthermore, there are stories like those of Noah and the Great Flood in Western cultures (with quite similar such stories existing in the prehistory myths of many societies everywhere, see Lang 1985) which are not fully consistent with a totally fatalistic attitude. Nevertheless, very little by way of the development of any kind of organized civil protection for disasters in general can be seen in prehistory and early historical times in societies with dominant fatalistic attitudes.

The earliest systematic but limited human efforts to try to adjust to and to cope with some kinds of disasters, were generated by recurrent *fires* and *floods*. The first of these led eventually to the development of fire departments. The second kind of disaster evoked certain kinds of specific engineering efforts. However, neither of these two kinds of agent-specific social reactions (and also the more general formation of police departments) constituted any kind of social invention to develop civil protection generally, although obviously they did represent agent-specific attempts to deal with particular kinds of disasters.

Fires. The Romans were apparently the first to establish organized groups to fight fires. These bands, known collectively as *Familia Publica* were composed of slaves. However, they were very inefficient and slow to respond. So when a fire in 6 A.D. burned almost a quarter of Rome, the Emperor Augustus abolished the bands, and created the *Corps of Vigiles*, which had full time and trained personnel and specialized equipment. They were the first professional fire services in the world. They expanded from Rome into the rest of the Empire, for example, to Britain by at least the fifth century A.D..

However, such services everywhere slowly disintegrated with the decline of the Roman Empire. It was only in 13th Century England that building regulations started to appear aimed at reducing the threat of fires along with the later appearance of fire insurance for adjustment to suffered losses. Also, fire engines, privately run by insurance companies, eventually appeared in England. However, the Great Fire of 1666 in London, which left 200,000 homeless and burned out the heart of the city, led to a massive reorganization of the fire services in the city. The new arrangement became the model for the structures and functions that fire departments have in most places in the world today.

Nevertheless, fire departments have been overwhelmingly concerned only with fires and not with disasters in general (Smith 1978). Recently some such organizations have become a little more involved with the crisis periods of disasters. This is because in certain Western type societies, they have taken over the general function of providing ambulance services and to an extent the providing of emergency medical services. For the most part these are phenomena of the last few decades mostly limited to large cities with Western culture types of lifestyles. However, in a few cases, there has been a more direct link between the fire area and civil protection generally. For example, in France, a law in 1884 first gave mayors and local fire departments the responsibilities for fire

disasters; this over decades evolved in 1982 into the major French system of civil protection, namely ORSEC (Dye 1995: 5-10). In Italy, the Directorate for Civil Protection in the Ministry of the Interior was partly developed in 1970 out of the state fire department. A little bit different, but still involving a link is the current situation in Taiwan, a rather developed although non Western society. There the overall responsibility for dealing with disasters rests in the National Fire Administration within the Ministry of the Interior. That organization deals with fire prevention, disaster relief and emergency medical services.

For most of their history, police agencies have been even less involved in disasters generally. It is quite common in Western societies to trace the development of modern police forces to the establishment of an organized police organization in London in 1829. However, anthropological evidence suggests that police functions evolved even in preliterate or kinship-based societies. Therefore, a police function is identifiable for centuries almost everywhere. Nevertheless, specialized police agencies are generally only present in societies politically organized as states. More important, the beginning of formal social control can be seen as primarily for the protection of the majority against a criminal minority (Robinson 1994).

Therefore, the development of police departments while leading to local specialized groups did not constitute any kind of social invention to cope with disasters generally. The police everywhere, until very recently, have not had any kind of disaster agent as part of their focus or responsibility (assuming civil disturbances are not categorized as disasters). Nevertheless, as a usually present community group with resources, they often in the last century responded in whatever way they could at the crisis times of local disasters, although primarily with the idea of maintaining social order. Therefore, it is because of this historical role that in recent times, some police agencies, such as in Great Britain, have evolved as the prime organizations for responding to local disasters. Yet overall the police have not been major actors in the development of civil protection for disasters. Social control has remained their main function.

Floods. As to floods, there have been human efforts to try and prevent or reduce their effects that go deep into the prehistory of the human race. For instance, there is archeological evidence that the ancient Egyptians and Chinese made major attempts to control recurrent floods (Waterbury 1979: 35). For example, in Egypt in the 20th Century B.C., the 12th Dynasty Pharaoh, Amenemher II, completed southwest of Cairo what was probably history's first substantial river control project, namely an irrigation canal and a dam with sluice gates. Stories that a Chinese Emperor, 23 centuries before Christ deepened the ever flooding Yellow River by massive dredgings and the building of diversion canals, appear more legend than historical fact. However, historical accounts report that dams for flood control purposes were built as far back as 2,600 BC. in Egypt and in 1260 BC in Greece (Schnitter 1994: 1, 8-9). These and other preventive and mitigative efforts in many other societies, although at times massive, were seldom continuously attempted, probably because most were not that successful. Moreover, there is little indication that specialized civil protection for disasters generally were ever developed from this kind of very agent-and-locality specific activity. Thus, although engineering efforts to cope with floods have been a function of many societies through the ages, none directly led to the evolution of any long lasting organization to deal with disasters in general.

III. THE RELATIONSHIP BETWEEN CIVIL DEFENSE AND CIVIL PROTECTION

Actually, a more specific although usually indirect impetus for creating some kind of civil protection were the air raids that accompanied the early wars of the 20th Century. In World War I, for the first time, local communities in Europe were subjected to a threat coming from afar. However, given that

the planes of the time had limited flying ranges and load carrying capacities, relatively little was done by way of preparation other than sounding alarms. Yet because of the experience and knowledge of those air raids, in the decades that followed and especially during World War II, elaborate systems of civil defense were developed in many countries (It is in this context that the term *civil defense* has usually although not always come to mean a system for the protection of civilians during wartime). This effort often specifically involved the creation of a civil defense organization linked to a warning system, semi-trained personnel such as air raid wardens and search and rescue crews, and facilities such as bomb shelters, etc. This carried over after World War II to the development of civil defense in many countries around the world.

The history of the general evolution of civil defense is a complex and diverse story, which however we do not address in this paper. Those interested should look at the literature on civil defense which, while substantial, has focused mostly on developed countries. However, there are some comparative descriptions. For example, Lonnie (1968), describes the early post World War II civil defense situation in Germany, India, Ireland, Israel, Italy, Malaysia, the Netherlands, the United Kingdom and the United States. Vale (1987) undertook a later examination of systems in Switzerland, the Soviet Union, the United Kingdom and the United States. Perry (1982) has the most detailed and complete examination of the situation in the United States up to the end of 1980. It should also be noted that his work is also far more analytical and uses a sociological framework that is absent in almost all other accounts which tend to be almost pure description. Goure (1986) has the most extensive discussion on the system in the former Soviet Union (see also Egorov 1976 but especially Vorobiev 1998 for the relationship to peacetime situations).

Yet even more complex and diverse has been the historical dynamics of the relationship between civil defense and civil protection activities and organizations. For our purposes, therefore, rather than examining all aspects, we present only three major generalizations about the relationship.

1. In some instances, a civil defense emphasis at the *national* level has led to the emergence or development of *local* civil protection systems.

For example, Scanlon notes how a concern with possible future air raids in Canada, indirectly helped civil protection to build upon civil defense. He reports that:

Despite the fact that disasters fall under provincial jurisdiction, the first Canadian emergency plans resulted from federal initiative because they were related to war rather than to disaster. They were established in 1939 when Canada was about to go to war against Germany . . . Throughout that entire period the federal government pushed the provinces to plan--and paid most of the cost of them doing so . . . many of the provinces piggy-backed disaster planning onto preparation for civil defense in war (1995: 19; see also, Scanlon 1982).

To an extent, this parallels what occurred in the United States, although the evolution was far more complex than in Canada (for historical data through the decades see An overview, 1962; *The Development*, 1967; Norton 1979; Blanchard 1984; McLoughlin 1985; Hurley n. d.). At the national level, a civil defense system developed earlier than any comparable disaster planning or emergency management system. However, at the local level, the prime concern after World War II became to prepare for and to respond to disasters. A DRC report, summarizing earlier studies the Center had conducted, said that the following trends emerged in community disaster planning in the 1960s:

1. The scope of disaster planning was broadened to include a wider range of disaster agents . . . 2. There was a decline in the assumption that preparation for a nuclear attack was sufficient planning for all types of disaster contingencies . . . 3. There was a shift in the focus of disaster planning from the emphasis on security of the nation to the concern with the viability of the local community (Dynes and Quarantelli 1977: 17, italics removed)

Then the **DRC** report went on to say that in the decade of the 1970s, the research showed that local community civil defense offices vary considerably in the scope of the hazards with which they are concerned:

Some are completely focused on planning and the associated task dealing with nuclear attack. Others are primarily concerned with natural disaster hazards. Many are concerned with both but the degree of emphasis on one or the other will vary. A smaller number show a range of concern with a wide range of hazards--man-made, nuclear, natural disaster, etc. (Dynes and Quarantelli 1977: 39).

The analysis also indicated where the separation started to occur locally between civil defense and disaster management.

Prior to 1950, it was assumed that the activities of the Federal government in the natural disaster areas would be transferred to the civil defense agency On the basis of those assumptions, many states and municipalities passed laws which located State and local natural disaster preparation in the civil defense. Federal responsibility for this function was transferred, however, in 1961, to the Office of Emergency Preparedness, and more recently, to the Federal Disaster Assistance Administration. The consequences of these actions has meant that local and State civil defense programs have often emphasized an approach which included community preparedness for all types of hazards, including natural disasters, while at the Federal level, nuclear concerns . . . were the major preoccupations (1975: 50)

As to the emergency management agencies (although before the late 1970s most were called civil defense offices) in local communities:

Some of them have had a long history of concern for local disasters and added concern for nuclear attack on top of this long standing concern. Other initially organized around nuclear concerns, have gradually given attention to a wider range of hazards . . . Several local directors suggested that, over the years, they have resisted the exclusive nuclear orientation by the National Office of Civil Defense. While they often used them as a resource in the nuclear preparation area, much of their effort on the local level was directed toward concern for other hazards. Some dislike the term and concept of "civil defense" and preferred and used such terms as emergency planning or safety to describe what they were doing on the local level. A few local officials also expressed some criticism of state level civil defense programs (1975: 41-41)

By the 1980s, **DRC** was reporting that:

many local civil defense agencies . . . gave very low credibility to their wartime mission and . . . the more viable officers were those with a strong interest and involvement in natural disaster situations (Quarantelli 1985b: 10).

As in Canada, the push from the national level to develop local civil defense was sometime informally used to build disaster management systems at the community level. The so-called "dual use" of personnel and resources for both wartime and civilian crises, contributed to this. Overall, it would not be incorrect to say that disaster planning and civil defense in the United States, especially from the 1960s to the 1980s had an uneasy, ambiguous and much criticized relationship. Somewhat linked at the federal governmental level, the relationship was often rather separate at the local community level where hostility to any kind of civil defense for nuclear war was often strong. Early in the 1980s, the emphasis turned sharply to a focus on disasters and away from civil defense, as symbolically indicated by the fact that many of the local offices changed their names from "Office of Civil Defense" to usually something with the terms "Emergency Management" or "Disaster Planning" in their titles (see the report by Wenger, Quarantelli and Dynes 1987 which marked the third time from the 1960s to the 1980s that DRC studied local arrangements for crises).

In the Canadian, American and other examples that could be cited, while there is some relationship between civil protection and civil defense, the latter were not the seedbed of the former. However, the relationship is far from a linear or always positive one. For instance, in the United States, the link between civil defense and the disaster planning or emergency management area, along some lines hindered the development of the latter. This is because some of the time, attention and resources that might have otherwise gone into the institution of better civil protection or disaster planning, was put into a wartime oriented effort. Yet the very origin of social science disaster research can be traced, in the United States in the early 1950s, to a military interest in what could be learned from civilian disasters that might be applied to how the population might react in air raids involving atomic or nuclear weapons. While the American military quickly lost interest after a few years in learning about the problem, the initial support did give considerable impetus to the start of systematic studies, especially of a sociological nature, of natural and technological disasters that otherwise probably would never have been undertaken until decades later. That early research in turn at least indirectly supported the growing interest in planning for such disasters in the 1960s by emergency oriented, nonmilitary, governmental groups at the local community level in the United States (see Quarantelli 1987; 1994).

2. Civil defense systems have sometime been one of the multiple sources out of which civil protection has evolved, or currently still involve only one organization.

In some cases, civil protection has had more than one ancestor, including civil defense. For example, New Zealand in the 1930s established an Emergency Precautions Scheme (EPS), a programmatic idea borrowed from Great Britain. This arrangement was influenced by the 1931 Napier earthquake which generated concern that should a natural disaster occur while many able-bodied men were on military service overseas, the ability of New Zealand society to respond would be markedly impaired. Then in 1943 the EPS changed its names to Civil Defence. Later, in 1959, EPS as such was incorporated into a Ministry of Civil Defence that eventually came under a Secretary of Internal Affairs. In 1995 a comprehensive review was made of the existing system with the goal of developing a new emergency management structure that would have responsibility for protecting civilians against any threat, domestic or foreign, to their safety (Neil Britton, personal communication).

The civil defense and civil protection system may be linked through the military. For instance, **Haga**, the home front unit set up by the Israel Defense Force, while initially envisioned to be a semi-military organization tied to the Ministry of Defense, essentially became an integral part of the Army (Jay Levinson, personal communication). Since the Gulf War, **Haga** was reorganized as the **Home Front Command**, with the official philosophy being that it will bring army resources to support civil efforts. In the new Russia and even earlier in the Soviet Union, the Civil Defense Force set up primarily for wartime situations were increasingly used for peacetime disasters although they were generally not very efficient or effective. The Chernobyl nuclear disaster as well as the Armenian earthquake of 1988 showed that war time and peace time crises were of a rather different nature. Thus, in July 1997 the leadership of the country issued a document stressing the need for a fundamental reconstruction of the Civil Defense System. Very complicated and often rather quick organizational and name changes were made over a period of relatively few years (see Vorobeiv 1998:54 for a descriptive account of the changes that led up to the formation of the current EMERCOM in Russia—the acronym for The Ministry for Civil Defense, Emergency Situations and Mitigation of the Consequences of Natural Disasters). So here too what was originally set up primarily for war time purposes was later partly used to build an organization for peace time crises.

In other instances, the military is not involved, but the connection between civil defense and civil protection in organizational terms is even more direct. In fact, in some cases, the distinction between the two is nonexistent. For example, currently in such diverse countries as the Czech Republic (Civil Defense 1995) and Singapore (Civil Defence 1985), the two functions are the responsibility of only one organization. Planning and response in such societies is both for disasters and wartime situations.

In still other countries, such as France (see Dye 1995), civil protection originated and continued independent of civil defense with two mostly separate social spheres under the control of completely independent organizations (although for some earlier weak links after World War II, see Chandessais 1964).

In addition, as Caroline Clarke (personal communication) points out, in much of Latin America there is "defensa civil" (which is really civil protection in our terms) that has both links to the military or internal security forces, and much more recently to those doing planning and managing who come out of the environmental and developmental organizations. To the extent that civil defense is a function of the armed forces there could be a connection with civil protection in such social systems.

However, what has happened in Mexico might be an indicator of the future evolution of civil protection in some developing societies. The current National Civil Protection System (**SINAPRO**) is totally a civilian operation, completely and independently developed of the military which up to the time of the Mexico City earthquake of 1984, when its role was totally aborted, had formal major responsibility for responding to disasters (see Dynes, Quarantelli and Wenger 1990). Within **SINAPRO**, there is the National Civil Protection Council, headed by the President of Mexico, which coordinates activities by both governmental and nongovernmental organizations involved in civil protection for both natural and technological disasters. Within that framework, the Ministry of the Interior is in charge of operations and is supported by a General Bureau of Civil Protection which coordinates civil protection offices in each state in Mexico.

To some extent, there are similar tendencies in Venezuela. The civil protection agency at the national level which has a purely peacetime focus was initially and up to the 1980s in the Ministry of the Interior. But at the present time appointments are made by state governors. However, at the

local level the military tries to affect local appointments. This in turn has led to a push to create a process and structure to get away from that influence.

3. The involvement of the military in disasters is often independent of any existing civil protection or civil defense system.

Almost any report about a major disaster will note presence of the military in the situation. Nevertheless, the role in disasters or civilian emergencies by the armed forces in any society has been and can be rather diverse (although the military role in disasters has only been rarely studied, an early but rare exception is Anderson 1970). However, it is important to note that the involvement of the armed forces in such occasions is often quite independent of any relationship between civil defense and civil protection. This is because in almost every society, at the crisis period of disasters, the military will provide relevant personnel, equipment and facilities. Put another way, the military may have no formal role in either a civil defense and/or civil protection system, but nonetheless may be called up in disastrous occasions.

For example, in Japan, where as early as the 1890s a central government disaster organization had been established, the very extensive disaster planning is totally independent of any possible wartime situation (Disaster Prevention 1994). Nevertheless, military units do play major roles in response to major disasters in contemporary Japan, as could be observed from the 1964 Niigata earthquake through, most recently, the earthquake in Kobe.

However, to put it mildly, there can be a very complicated evolutionary development of civil protection which on the way might separately involve both civil defense and the military. This can be seen in Italy. In the 1908 Messina earthquake, the military for the first time was given major responsibility for responding to civilian disasters. However, after 1927 the armed forces lost their lead role to the Ministry of the Interior, the Ministry of Public Works, and the Red Cross (Battisti 1978). The Interior Ministry eventually assumed certain civil defense functions. However, in the 1970s a series of new laws established a cabinet level Ministry of Civil Protection for disasters, although the Ministry of the Interior (which earlier had also taken over the state fire department organization) was left with some responsibilities for crises that might threaten Italy. At the time of the writing of this paper, there is also a Directorate for Civil Protection in the Ministry of the Interior. However given the volatility of the Italian political and governmental scene, the current situation may have evolved even further than what we have just depicted.

IV. CURRENT CHARACTERISTICS OF CIVIL PROTECTION

Although there is much diversity and complexity in civil protection activities and organizations around the world, some rather common elements have recently evolved. At least it is possible to discern certain accelerating tendencies. We will note ten such trends. Yet even though we postulate these existing on a world wide basis, on the whole they are more apparent in developed than in developing societies. This is of practical importance because currently far more disasters occur in developing nations. A country, such as Bangladesh, has lost more lives in just one major catastrophe, a typhoon, than many European societies have totaled in their complete history as nations. Also, economic losses are supposedly relatively higher in the developing than developed world.

1. As we enter the 21st Century, civil protection has finally become explicitly accepted as a *major governmental responsibility* in practically every country in the world. At the national level, usually the relevant activity is quartered in a formal governmental agency, very close to but relatively rarely at the highest level such as a Cabinet office. This highest level organization

frequently has policy and programmatic directive responsibilities, but seldom operational ones, which are mostly delegated to local community units. This is quite a change from even two decades ago when a United Nations (UN) survey found dozens of countries had no formal national disaster planning and no explicit civil protection organization at that level.

There is a much more mixed picture at the local community level. We can see this even in the United States which is one of the leaders in instituting disaster planning. For example, in 1982 the International City Management Association in its first national survey of emergency planning, found that about 20 percent of local governments did *not* have a formal disaster plan (Emergency Management 1983). Undoubtedly that percentage would be lower today in the United States, but for many countries in the world, especially developing societies the percentage would undoubtedly be much higher.

Furthermore, planning for disasters is not too high on the attention agenda of citizens at large. Nevertheless, most of the population, in modern societies at least, does see civil protection as both an acceptable and expected responsibility of the government. Interestingly, this perception and expectation cuts across most political ideologies, whether of the left or the right.

Related to this is that citizen groups advocating disaster planning have been emerging in the last decade or so (Stallings and Quarantelli 1985). Many of them were initially concerned with the risks associated with nuclear power. However, recently citizen groups concerned with natural hazards and disasters have emerged, not only in developed societies (for examples in the United States, see Quarantelli 1984), but elsewhere too.

2. On a world wide basis, the civil protection arrangements are very *heterogeneous*. What exists also is often organizationally complex and poorly integrated, both internally and externally. At one extreme are the relatively elaborate social organizations and arrangements in such societies as Japan, Russia and the United States. In the latter, at the national level, there is the Federal Emergency Management Agency (FEMA) with ten regional offices; below them are fifty state level offices and within each state most communities have civil protection groups of some kind. These entities range from formal bureaucracies with full time personnel to only one part time semi-volunteer official at a village level (for seven major local types that exist, see Wenger, Quarantelli and Dynes 1986; see also Kreps 1990; Sylves 1991).

However, even in the more elaborate civil protection systems there is often poor integration between the higher and lower levels. The possible complexity and difficulty are illustrated by Italy where the national and regional/local levels have unintegrated missions and goals (which until recently was further complicated by an unclear relationship between two national level entities, the Department of Civil Protection at the Cabinet level and the Directorate for Civil Protection in the Ministry of the Interior).

The structural or organizational patterns of civil protection in advanced societies also differ significantly along other important dimensions. For example, there are very centralized national level systems such as in Japan. In contrast to this hierarchical system with almost all authority at the top level, are where lower governmental levels are the most important social actors. For instance, there is a very decentralized system in Australia, where the federal government has little formal power with respect to responding to or planning for disasters. As another example, England for the most part has no national disaster level planning of any kind (Glenarther 1986) with considerable reluctance and resistance to moving in that direction.

Then at the other extreme, in some developing countries, particularly in Sub Saharan Africa, there exists at best only a nominal social organization at the national level, few if any local units, and no formal planning of any kind. In these societies, when disasters occur, the relevant crisis time functions are carried out by international relief organizations, both private--frequently religious ones--and those from the United Nations (and as indicated earlier, often the armed forces of the society).

In part because of what has just been indicated, at a slow but accelerating rate, civil protection is establishing itself both organizationally and functionally at the international level. The UN has had several, not well integrated, disaster oriented organizations with diverse missions. The major lead agency until a few years ago was the **Department of Humanitarian Affairs (DHA)**, headquartered in Geneva, which was concerned with a variety of collective stress situations. Missions ranged from dealing with refugees as a result of civil strife situations to maintaining strategically located stockpiles for quick responses to natural disasters. The activities and programs of all the international groups in the civil protection area are necessarily heavily colored by political considerations which recently led the UN to replace the DHA with the **Office for the Coordination of Humanitarian Affairs (OCHA)** with roughly the same missions.

To a considerable extent, all the existing structures for and functions of civil protection simply reflect the prevailing political/economic/cultural patterns of different societies. Nevertheless, looked at over time, certain common tendencies are evident everywhere. All governments of whatever political ideology have come to accept the idea that civil protection is a governmental responsibility, and usually that a specialized organization, usually of a civil nature, is needed for this purpose (although even in a disaster prone society such as India, national disaster management is a function within the Ministry of Agriculture, but does not exist in a separate organization). Associated with this is the growing acceptance of the notion that disaster planning can be undertaken. Because these notions presently are seen as commonplace, it should be noted that these are views of very recent origin, mostly appearing only in the last few decades.

3. There is a rather mixed but slowly developing picture regarding the links of civil protection to the planning and managing of other non-disaster community threats such as *conflict type* and *public health* situations. For the most part, the first type is usually the prime responsibility of social control agencies such as the police and the military. The second type is almost always in the purview in some way of the health systems of the society.

In the main, all societies have organizations such as the police and the military for handling internal and external threats to the social system. In fact, in some developing countries especially of Sub Saharan Africa, the army is often the only viable national level institution with relevant resources for dealing with any major crises. Increasingly, governments are accelerating separating organizations and processes for handling civil disturbances, riots, terrorism, etc., which are different from those used for civil disasters. Sometimes, the separation is not yet complete as can be seen in the example we previously gave of Italy. Nevertheless, except in certain sections of the developing world, there has been a tendency to give social control agencies such as the police only a secondary and subordinate role in disasters, especially in the planning for but somewhat less so in the managing of disasters. It is also quite noticeable that particularly in developed societies, there are strongly held views among citizens in general that the military should be kept from having a lead or even a major role in disasters. In the last decade in the United States, occasional calls for a more prominent role for the military in disasters, was strongly refuted by formal review groups within and outside the federal government.

Another problematical arena has to do with disasters generally and the "health" area. For example, epidemics and plagues are frequently treated as public health problems and by the medical organizations in a society. Often they are not categorized as disasters or handled primarily by the disaster organizations of the social system involved. It is noticeable that the AIDS epidemic has been clearly avoided by disaster planners and emergency managers. Even disaster researchers have generally not studied many aspects of this phenomenon although in their writings they sometime refer to past situations such as the Black Death plague in the Middle Ages in Europe as a "disaster."

Yet just as conflict situations are being slowly separated from the disaster area, there are some indications that this is also starting to happen with respect to certain kinds of serious and recurrent health problems that in some sense can be thought of as involving an "epidemic." There are probably several reasons for this trend. Some disaster researchers have suggested this is happening because much of the planning and managing for these other crises differ too much from that necessary for disastrous occasions. Others, especially officials from planning and management agencies, have expressed concern that attention to AIDS (as well as **complex emergencies**) could lead to such phenomena absorbing most of the resources for civil protection, and leaving little for more traditional disasters (Caroline Clarke, personal communication). Whatever the reason, there is reason to think this differentiating trend will continue. From a sociological point of view, it would simply reflect the continuing specialization of the very complex and intricate division of labor that characterizes modern societies.

4. There has been in the last decade an accelerating focus in the civil protection area on using a *generic* or an *all hazard* approach, rather than setting up agent specific entities or functions (e.g., for floods or chemical threats). The agent specific approach assumes that each type of disaster agent (e.g., a volcanic eruption, a nuclear radiation fallout) or classes of agents possess certain distinctive characteristics for what occurs. Yet increasingly it has been recognized that a hazard *per se* is not a disaster; a disaster is a social happening. From this perspective, as said earlier, a disaster can be identified only in terms of some features of a social occasion, that is, some characteristics of the individuals and groups reacting in a crisis. This socially oriented conception of a disaster forces a focus on the common or similar properties of the social occasion and away from the specific physical features of each natural and technological agent and impact. Thus, there has been an increasing movement away from agent specific formulations and an emphasis on across-the-board features in the response. As such, it is more and more being accepted that civil protection should take a generic rather than agent specific approach to disasters.

Nevertheless, this point of view frequently encounters considerable resistance. It seems to violate common sense, for as an example, are not chemical hazards different from floods hazards? (which of course ignores the fact that the question is not a meaningful one to start with if hazards are seen as distinctively different from disasters). Equally as important, many physical hazardous "agents" are the objects of concern of particular government agencies, or in more sociological terms, are the major work domains or territories of certain organizations. To forego a specific hazard approach is often to undermine the very rationale for the existence of the organization (if it was established to deal with earthquakes or with oil spills, for example, the bureaucracies involved will resist their mission being eliminated or at least reduced in a more general or generic approach to civil protection). Also, in some although not all societies, specific private sectors such as the nuclear power or chemical industries are very reluctant to turn over important control or supervision of their major work activities to a government agency, an almost necessary structural organizational arrangement if a generic approach to disasters is taken.

Given all this, it is not surprising that the generic approach to disasters is not fully in place even in countries such as the United States where the all hazards approach is official policy. But the direction of the trend is clear. More societies such as Great Britain, Australia and Canada have recently formally adopted the generic view, although the terminology used to refer to the process is not standardized. The all hazard approach is also likely to be reinforced as the civil protection area increasingly adopts a four stage or phase approach to disaster planning, which we will now discuss.

5. There is a move toward differentiating disasters into time or stage phases. The idea of differentiation was first developed by disaster researchers in the late 1970s. However, an explicit typology was first advanced by Hillary Whitaker as part of a project she undertook for the U.S. National Governors' Association on state level emergency planning (see 1978 Emergency Preparedness Project 1978). Building on this, civil protection--although perhaps more accurately--disaster planning, is increasingly being thought of in terms of *four* different phases or stages.

These are: (1.) *Mitigation*, which includes the policies and actions undertaken at a time distant (usually considerably before) from an actual disaster situation, and which are intended to prevent or reduce a disaster impact when it occurs. Examples would be building codes, land use regulations, educational and training information, insurance. (2.) *Preparedness*, which has to do with the steps and measures planned for and undertaken when the probability of a disaster in a particular locality is immediate. Examples would be the issuance of warnings and the evacuation of people. (3.) *Response* refers to those actions taken during and immediately after impact to deal with crisis time problems. This is illustrated by search and rescue efforts and the providing of emergency medical services. (4.) *Recovery*, which has generally to do with activities carried out after the response in the crisis time period is over. Examples would be the rebuilding of homes and the reopening on a regular basis of local businesses.

In actual practice the terms are not always clearly differentiated. For instance, the 1994 *Yokohama Conference* was mostly organized around the theme of disaster mitigation. However, most countries in their presentations used the term "mitigation" to cover all four phases of disaster planning. Nevertheless, some reports, such as the one by the United States, mostly emphasized mitigation in the narrower sense of the term. Likewise, only in some societies has the fourfold differentiation been officially formalized and implemented in practice. Yet compared to the situation even just a decade ago, a trend toward a phase or stage differentiation of disaster planning has clearly begun.

The fourfold distinction is perhaps also somewhat helpful in understanding the slightly different foci of the terms, disaster planning, emergency management and civil protection. Thus, the use of the term, **emergency management** typically means a major concern with mostly the preparedness and response phases of disasters. On the other hand, **disaster planning** frequently has reference to the full range of activities from mitigation through recovery. As to **civil protection**, it often has less reference to a time stage than to the social arrangements in place for generally dealing with disasters and other civilian type kinds of societal and community crises. Thus, while the referents of the three terms have some common elements, they are not identical (with a further complication being that when the terms are translated, the connotations and denotations of the three terms are not identical in different languages; an issue which needs further examination but will not be attempted here). Nevertheless, there is enough overlap to allow usage as in this paper of any of the terms without loss of meaningful communication.

6. In many countries there has been a growing explicit emphasis on disaster *mitigation*. That is, there has been a considerable acceleration of the attention and efforts made to institute measures

and action that will if not prevent at least reduce the impact of disasters. While preventive or mitigatory actions in the civil protection area have long been undertaken by human beings as we earlier illustrated, what is relatively new in the recent emphasis is its official explicitness, the scope of the programs that are being planned and implemented, and the resources being used in the effort.

In *developed* countries this change in focus has been driven by several factors: the ever increasing economic costs of disasters and disaster relief, the complaints and pressure from citizens and activist groups who increasingly think that governments should try to prevent disasters in the first place rather than just reacting to their occurrence, and a research driven understanding that many emergency-time problems in a disaster response can only be reduced or solved by actions taken long before a crisis. In *developing* countries, the process has additionally been reinforced by a recognition that national development can be seriously set back by a major disaster, in some cases, the material losses can be up to five or more percent of the yearly gross national product. Thus, there is considerable pressure to link disaster planning to development planning, a linkage reinforced by the position taken on this matter by the World Bank and other international lending agencies (Kreimer and Munasinghe 1991).

Indicative of this general trend was the proclamation in 1990 by the United Nations of the *International Decade for Natural Disaster Reduction*, which had as one of its major themes, disaster mitigation. Overall this involved an effort by the UN to put disasters on the attention and action agenda of countries in the world, especially those of a developing nature. While certain statements and actions linked to the Decade were nominal and proforma, and while not all nations participated and others were involved mostly because of possible commercial exploitation, it is clear that the UN program did generally succeed in getting world wide attention and in a significant number of developing countries especially, led to considerable improvement in disaster planning.

7. Despite the much greater use of planning, so far the implementation has been uneven. It is clear that it is easier to plan than to bring that planning into being in managing an actual disaster. Thus, studies have shown that the preparedness planning is better than the response patterns. Hoetmer noted that while disaster planning is widespread in American cities:

What is puzzling is that after years of research on organizational behavior in emergencies, local government continues to be surprised when standard procedures in lengthy, detailed plans are irrelevant in the real disaster (1984: 1)

In the United States, this matter has been studied for more than two decades by DRC (see, e.g., Anderson 1969; Dynes and Quarantelli 1977; Quarantelli 1985; Wenger, Quarantelli and Dynes 1986; Quarantelli 1988). The response of the local emergency management agencies (many in the past once known as local civil defense offices), have generally continued to be problem plagued. There is as there was in the previous 20 years, persistent problems regarding coordination, communication, resource allocation, task assignment, and organizational responsibility. It would be incorrect to say that there has been no overall improvement, or that any particular emergency management agency might not do a good job in any particular disaster (e.g., for success cases see Wenger, Quarantelli and Dynes 1986; see also, Drabek 1994 for another case study). However, the management responses to disasters in general, have not matched the considerably better preparedness planning that has been undertaken.

The unevenness between preparedness planning and response managing is attributable to several different factors (see Caplow, Bahr and Chadwick 1984; Kartez 1984; Kartez, Kelley and Lindell

1987). For one, there continues to be a failure of local agencies to recognize that they have to take a system or overall perspective. There also continues to be an underestimation of the need to plan for flexibility and improvisation in the crisis time response (Kartez and Lindell 1987). As Kreps has written:

. . . effective emergency management requires both improvisation and preparedness. Without improvisation, emergency management loses flexibility in the fact of changing conditions. Without, preparedness, emergency management loses clarity and efficiency in meeting essential disaster-related demands (1991: 33).

Finally, there is little recognition that there are inherent limits to any kind of planning. Here again Kreps makes the point well:

Even so, according to disaster studies of the last thirty years, preparedness and actual disaster responses have their limits. Much of what goes on will inevitably have to be improvised. Gaps and inefficiencies will exist, yet things still get done (1991: 45-46)

Studies of how well disaster preparedness planning is implemented in actual practice outside of the United States, are rather rare. However, some work in Canada, Japan, Italy and elsewhere do suggest that the problem is not peculiar to the United States. Britton (1991a, 1991b), for example, has shown roughly similar problematic aspects in management responses to disasters in Australia.

8. There has developed, compared to what existed just a decade or so ago, a much more *sophisticated* approach to issues associated with disasters. For instance, there is growing recognition, that planning is not managing (Quarantelli 1985b, 1997). More and more a distinction is being drawn between the two processes. The former has to do with strategy, the overall approach to disaster problems. The latter, tactics, have to do with the specific contingencies that have to be dealt within an actual disaster situation. Because there is only a partial correlation between the two processes, it is possible to have good planning but poor managing of a disaster occasion (and even vice versa surprising as that may be thought!). This difference between the processes is starting to be recognized in societies with the most advanced disaster planning. It is not an accident that the name of the major federal organization concerned with disasters in the United States went in a two-decade time period from the Office of Emergency Planning (and at one time, Emergency Preparedness) to the Federal Emergency Management Agency.

Another example of this growing tendency is an increasing acceptance in the civil protection area, that the greatest problematical areas in preparing for and responding to disasters are with the participating organizations more than the affected victims. That is, research has shown that human beings as a whole react well to the crisis of a disaster occasion. They do not break down in panic flight, or engage in antisocial behavior such as looting. Instead the survivors show much prosocial behavior, undertaking for instance, by far the bulk of the search and rescue efforts for casualties, and also they are very active in providing whatever food, clothing and shelter is needed. In an important sense, individuals rise to the challenge of a disaster (at the operational level, this was noted in an UN report on the Kobe earthquake in Japan (see The Great Hanshin-Awaji 1995).

In contrast, research has shown that responding organizations frequently falter in their efforts to manage the crisis period. They are almost always inefficient and sometimes ineffective in their emergency time activities. Seldom is the necessary coordination achieved among the many organizations that converge on the disaster site, what disaster researchers have characterized as

the "mass assault" mostly of an organizational nature that occurs when a disaster impacts. Studies show that the generally poor overall organizational response in community disasters stems from many factors: poor prior disaster preparedness; the difficulty of bureaucracies that operate well in everyday situations to shift to the greater flexibility and innovation required in crises; the necessarily inadequate information base available in the immediate impact period; the difficulties in understanding the new roles and functions of the many emergent (without prior-to-impact existence) groups that appear at the height of the disaster; and unresolved confusion over jurisdictional responsibilities or organizational domains (these research based observations were also operationally noted in Kobe, see the UN report cited above).

Disaster concerned organizations have many problems, structural and otherwise, but they are seldom those expected. Among the more crises oriented groups involved in civil protection the following particularly stand out. Many fail to recognize that disasters are both quantitatively and qualitatively different from everyday emergencies. Planning for the latter is necessarily inadequate for the former. Also, at the crisis period of a disaster there are information flow, decision making and coordination difficulties within and between responding organizations. Planning that fails to recognize that there is much emergent behavior associated with these matters, will necessarily lead to inadequate managing (Quarantelli 1996,1997). Also, although it may be a memorable experience, studies suggest that only selective organizational learning and changes at best will follow a disaster. Although modifications in disaster planning and emergency management have not kept pace with the ever increasing base of research knowledge, changes are moving in the right direction.

Especially important is the fact that there is greater awareness of such typical problems, and an increase in efforts to deal with them. Longitudinal studies and observations over the last several decades indicate a considerable and continuing improvement in organizational planning and managing of disasters in many societies, although there are no civil protection systems, even in developed countries, which could be presently characterized as being ideal or excellent by normative criteria derived from social science evaluative research studies.

As just implied, research is being more and more used for civil protection problems, especially the emergency management of disasters. We do not want to imply that the research findings are fully applied, or even that they are accepted by all disaster planners and managers. Far more is known than is applied. Nevertheless, there has been a creeping use of studies of a social science nature that provided data on the actual and typical problems that surface in disaster occasions.

However, we should not become too sanguine about the spread of research-based knowledge in the disaster area, especially among practitioners or research users. For example, a former Director of the U. S. National Institute of Mental Health program for Disaster and Emergency Health recently wrote that: "we now know . . . that looting is practically inevitable in major disasters" (Frederick 1995:220)! No example or source is cited for the statement, which is not surprising since five decades of research on that issue conclusively point in the opposite direction. Such ignorance of the disaster research literature is fortunately becoming less common among government bureaucrats, but it is not unknown.

9. However, while research has undoubtedly contributed to the development of civil protection, somewhat more important in the evolution particularly at the operational level have been nonscientific factors. As sociologists have long pointed out (Blumer 1969; Lofland 1992; Aguirre 1994), all social phenomena are subject to *fads* and *fashions*. These labels refer to a preoccupation by diffuse collectivities on a nontraditional object or process; the focus could range from a new scientific theory to a recreational activity (Aguirre, Quarantelli and Mendoza 1988). As such, unlike

in popular discourse, to call something a fad or a fashion is not a form of name calling. The labeling is particularly applicable to diffusion of innovations of any kind where their acceptance stems not from their intrinsic value or external merit, but for reasons such as political considerations, efforts by organizations to maintain their existence in the face of declining use of their services, the vested interests of those who have developed an innovation, etc.

We can see such recent fads in the disaster area. As one example, we can cite the widespread adoption in the United States of the Incident Command System (ICM) as the organizational/operational model for disaster management. It has been pushed by elements of the fire community. However, there is no systematic empirical evidence to support it as necessarily a good idea, let alone the only management system that ought to be used. In fact, such research data as do exist indicate serious problems with any use of ICM (see, Wenger, Quarantelli and Dynes 1989; Wenger, Quarantelli and Dynes 1990; see also, Stoffel 1994)

Another faddish innovation is the supposed widespread appearance of post-traumatic stress disorders (PTSD) in the aftermath of disasters (e.g., Kalayjian 1995). Appearing first in the United States, this notion has spread to such countries such as Australia, Armenia and recently surfaced after the Kobe earthquake in Japan. Along many lines, it is possible to see that a "mental health disaster industry," as some have characterized it, has come into being with vested interests for trying to develop this particular viewpoint.

Actually more important from a research viewpoint is the degree, if any, to which disasters generate PTSD, the underlying rationale advanced for advocating extensive crisis intervention measures. The issue is a complicated one. The very concept of PTSD was formalized in the Diagnostic and Statistical Manual of Mental Disorders (DSM), as have other diagnostic labels, more as a result of their advocacy by certain pressure groups than of scientific evidence (see Forever Revising: The DSM Process, 1987). The concept itself has been challenged on theoretical grounds (Bowman 1997) as has the idea of mental disorder (see Wakefield 1992). Others have argued that undergoing a very stressful situation such as a disaster may actually create positive mental health consequences (Tedeschi, Park and Calhoun 1998). Elsewhere we have extensively discussed the research evidence from disaster situations (Quarantelli 1985a), and so have others (e.g., Robins 1990; for a balanced proponent of the concept, see Green 1994). It would take us too far afield to further consider these matters in this paper. Sufficient for our purposes here, is that a strong case can be made that the diffusion of the current crisis intervention model to deal with PTSD has strong faddish characteristics, whatever the ultimate research verdict will be on the negative mental health effects of disasters.

Even the current emphasis on mitigation, whether by the UN *International Decade for Natural Disaster Reduction* and its successor program or by FEMA, could be viewed as somewhat faddish. Do we really know that mitigation is the *best* strategy. Where is the empirical research evidence that a focus on mitigation will have the greatest payoff? At a theoretical level, that notion has been fundamentally challenged by political scientists and cultural anthropologists. For instance, Douglas and Wildavsky (1982; Wildavsky 1988) argue that there is greater value in developing societal resiliency to better cope with environmental adversities. Now at one level, the taking of long ahead of time efforts to prevent or reduce disasters, certainly is logical and makes much sense to us. Yet we are extremely hard pressed to cite systematic empirical research data of a comparative nature that supports the idea. It may be correct, but we at present do not know that is the case apart from anecdotal impressions. The diffusion of the idea can be understood in terms of a faddish innovation.

There is no reason to think that fads will disappear in the disaster planning or any other area. They are an inherent part of social life. Fads and fashions also actually have some value in the development of an area. Among other things, they do involve the use of new ideas and procedures, and nontraditional activities, etc. and generally that is good for any area, civil protection or otherwise. Furthermore, their appearance is likely to generate research, testing what accounts for their adoption and its value for an area.

10. In most countries, the equipment and facilities, but especially the personnel of civil protection agencies have considerably improved in recent years. In the past, the professional quality of the personnel involved left much to be desired. In some social systems, political considerations were the major factors which strongly affected who were nominated or given positions. In other instances, the personnel of the civil protection agencies consisted mostly of retired military officers who saw it as a second relatively easy career path that did not require any special training or knowledge. The latter pattern could be seen in a variety of countries ranging from the United States to Chile, especially at the local community level. In contrast and increasingly so most recent recruits in many societies seem to have a more genuine interest in the work and look upon it as a career.

This last is consistent with a recent general view that:

... we are seeing the future of emergency management right now. It is a future characterized by rapidly changing information technologies, a growing body of scientific and technical information on current and future hazards, increasing demand for trained and experienced emergency managers, and the development of a global community of emergency management professionals. It is also a future characterized by new and better tools for decision making, increased pressure on emergency management agencies to be innovative and responsive ... (Special focus issue 2000).

Also, while the field has not yet become a clear-cut profession, there is clear movement in that direction in some societies with the development of regular college level curricula and even some higher level educational degrees in emergency management, a number of certification programs, advanced courses in training institutes, and professional associations, journals and newsletters (for details mostly about the United States, see Malone, 1993). To be sure much of the training effort focuses on logistic problems and suggests the handling of problems with a military like orientation. Yet there is also evidence of a social science research knowledge creep into more educational activities such as that provided by the National Training Center at Emmitsburg in the United States, at the Australian Emergency Management Institute, and the Oxford Centre for Emergency Preparedness and Response in England. In Mexico, in 1989 the National Disaster Prevention Center (CENAPRED) was established with the goal of providing technical support related to training, research, and dissemination of techniques for disaster reduction. The Europeans have established eleven specialized disaster-related centers, some of which have major training and educational functions (see Network 1994). In the United States, the Natural Hazards Research and Applications Information Center at the University of Colorado has as one of its prime missions, bridging the gap between research and practice (for a discussion of the varied activities the Center undertakes, see Myers 1993).

In addition, at an accelerating rate, advantage is being taken in the civil protection area of recent technological developments. In many of the more developed countries, computers, cellular phones, complex geographic information systems, electronic networking and similar high tech innovations are becoming standard equipment or facilities. However, the use of such technology while generally positive, does create new kinds of problems, for example, an overdependence on the technology and

an underestimation of the social infrastructure necessary for effective operations. It also means that the richer are getting richer and the poorer getting poorer, when a comparison is made of their adoption in developed and in developing countries.

V. FUTURE EVOLUTION

Whatever the situation for civil protection is at present, the future will be different. There are two major factors that will change the current situation. The first is that there will be more and worse disasters in the 21st Century. The second is the increased and better research about disasters that will be available. In addition, there is another factor that may become increasingly important, the spill over from the movement almost everywhere to a market type economy.

As the world continues to industrialize and to urbanize, it is continually creating conditions for *more and worse disasters* (Quarantelli 1995b). Both social processes, which are simply a feature of social change, will increase the number of potential disaster agents and enlarge the vulnerabilities of communities and populations that will be at risk.

Making for an increase in agents are: (1) the accelerating incidents of accidents and mishaps in the chemical and nuclear areas; (2) technological advances that reduce some hazards but make some old threats more dangerous such as fire protective materials that slow the spread of fires but that can asphyxiate people; (3) new versions of old and past dangers such as urban droughts; (4) the emergence of innovative kinds of technologies such as computers and biogenetic engineering whose breakdowns will present distinctively new dangers; and (5) an increase in multiple (e.g., natural disasters creating technological ones) or synergistic type disasters resulting in more severe environmental consequences.

Increasing the vulnerabilities are that: (1) both natural and technological disaster agents will simply have more built-up areas to impact; (2) more vulnerable kinds of populations will be impacted than in the past such as the growing number of the aged in highly developed societies and the very young in developing countries; (3) metropolitan areas will be increasingly impacted and along certain lines the social organizations (rigid bureaucracies) and population configurations (e.g., diverse multiethnic groups) of urban communities are not well suited for coping with disasters; (4) increasingly localities will have disastrous conditions from sources that may be quite distant (as Western Europe had from the radioactive fallout from Chernobyl or Southeastern Asian countries had from the smog fallout from fires in Indonesia) and even from the past (such as buried hazardous wastes); and (5) certain future disasters have catastrophic potential for social life although they may produce no casualties or much property damage as could occur in computer system disasters.

Will these change the perception of disasters? If so, in what ways? For example, we could speculate about two possibilities. One, if it is accepted that there will be new disaster agents say resulting from computer system failures and biotechnological accidents (point four in two paragraphs before), these are potential disastrous threats that have not been in the thinking and perception of people and groups until very recently. Two, if disasters are less equated with casualties and direct damages but increasingly with crises that are disruptive of community life (point 5 in the last paragraph), this also would be a movement away from popular and traditional views of disasters. In that sense, the world would necessarily be seen as more risky than ever before. This view of course is consistent with certain theoretical ideas that have been advanced by, for example, Perrow (1984), Beck (1992, 1995), and Adam, Beck and Van Loon (2000), that the world of the future will have more risks in it, mostly stemming from the fact that some of the technologies that are used to reduce certain threats will themselves create new and sometime qualitatively different risks.

While potentials are not actualities, by almost any criteria that could be used, we almost certainly will have more and worse disasters along the lines indicated. However, this tendency will be partly counterbalanced by the fact that there will be more and better research on disasters. The field of disaster studies has markedly increased in the last decade and appears to be on an upward spiral. We will only briefly and selectively illustrate this below.

There is not only more *social science research* than ever before about the civil protection area, but equally as important, it is becoming internationalized. Several decades ago, there was only a small body of reliable knowledge available, and it had been generated in and about mostly a few societies such as the United States, Japan, Canada and some European nations. Currently, there are at least four dozen countries around the world whose own social scientists are involved in disaster studies. These range from Armenia to Mexico, from India to Argentina, from The Netherlands to China (for detailed abstracts of around 100 studies in the former Soviet Union and current Russia, see Quarantelli and Mozgovaya 1994; see also Porfiriev 1998).

In addition, while the Disaster Research Center and The Natural Hazards Research and Applications Information Center in the United States (joined somewhat later by the Emergency Communications Research Unit in Canada) existed alone for decades, there are now new major research centers and institutes elsewhere in the world which focus exclusively on social aspects of disasters or have such a focus as an important component of their operations. Examples would be the Crisis Research Unit in Egypt, the Asian Disaster Preparedness Center in Thailand, the Bar-Ilan University Mass Emergencies Project in Israel, the Center for Disaster Studies at James Cook University in Australia, the Crisis Research Unit in Holland, the Disaster Prevention Research Institute at Kyoto University in Japan, the Emergencies Research Center in Greece, the Disaster Research Unit at Christian Albrechts University in Germany, and the UN Center for Regional Development in Japan. In addition, less formally organized research groups, are active among others, in Armenia, China, France, Italy, Mexico, the Netherlands, India, Russia, and Sweden. Additionally, The Council of Europe member countries through the *EUR-OPA Major Hazards Agreement* have established a network of European specialized centers on disaster problems. Of the eleven centers so far created, four undertake social science research on disasters (at the Higher Institute of Emergency Planning in Belgium, the European Centre for Research into Techniques for Informing the Population in Emergency Situations (CEISE) located in Spain, the European Centre for Disaster Medicine (CEMEC) in San Marino, and the European Natural Disasters Training Centre (AFEM) in Turkey (see Network 1994).

As well as innumerable international conferences with participants from many countries, bilateral conference involving research scholars have also become more common (e.g., Quarantelli and Pelanda 1989; Quarantelli and Popov 1993). Publications have also started to appear in other than the English language especially in Spanish. Translations or abstracts have been made of English language publications into other languages and vice versa (e.g., Yamamoto and Quarantelli 1984 which abstracted Japanese language sources). Basically what all this reflects is the increasing internationalization of social science disaster research, a topic which deserves a full treatment of its own but beyond the scope of this paper.

Furthermore, these social science researchers have developed their own professional infrastructure and have their own associations (e.g., *The International Research Committee on Disasters in the International Sociological Association*; *the Disaster and Social Crisis Research Network in the European Sociological Association*), as well as journals (e.g., *Disaster Prevention and Management*; *The International Journal of Mass Emergencies and Disasters*; *The Journal of Contingencies and Crisis Management*; and *Disasters: Journal of Disaster Studies and Management*) and newsletters

(e.g., *Unscheduled Events; The Natural Hazards Observer*) publishing on disaster-related topics.

The studies have been somewhat uneven with certain topics being intensively studied and others almost ignored. For example, there is a solid body of knowledge about warning systems and warning messages, but we know almost nothing about the handling of the dead. Initial research focused heavily on the response of human beings in crises; the more recent research has focused much on disaster aspects of organizations and communities. The earliest work particularly concentrated on the crisis time period. Currently there has been a substantial increase in research on both the mitigation and the recovery phases of disasters. Civil protection organizations were at one time fairly extensively studied in the United States, but there have been no recent studies (Tierney, Lindell and Perry forthcoming). Also, except for an isolated study here and there, they have not been given as much attention elsewhere, and suggesting another topic for future intensive research.

Unfortunately, although in some respects disasters are worst for developing countries, there is less research, especially of a social nature, in those societies. However, recent developments in such countries as Mexico, India, Turkey and Brazil give some hope that social science research into disasters will accelerate in those parts of the world too. In Mexico, CENAPRED is supposed to do research not only on the characteristics of natural phenomena but also on the human activities that are potential sources for disasters; there is also research on the social aspects of disaster prevention at the National Autonomous University of Mexico (UNAM). Now as we said earlier, while it would be naive to see research as the major factor in bringing about changes in civil protection, it is an operative factor that is more likely to become more important.

Civil protection systems and organizations will be seriously challenged by future disasters. But there will be far more understanding and knowledge both about the groups and the crises than ever existed before. Measured against some ideal standard, perhaps the outlook is not too bright. Yet measured against what has existed in the past, what has evolved to the present, and what we can expect in the future, we can project continuing improvements in disaster planning and managing.

However, in conclusion we should mention a kind of wild card tendency that may be operative in the future. There is a larger social trend that possibly may affect the tendency for civil protection to be completely accepted as almost exclusively a prime governmental responsibility. Practically everywhere in the world there has been a strong movement to privatize functions previously performed by governments. This tendency has started to appear in the crisis or disaster area. As Handmer (2000) has noted:

There appears to be nothing inherent about warnings and emergency management that makes them exempt from this general trend . . . the sector is becoming increasingly private . . . as well, it is likely that organisations responsible for warnings and emergency services will come under increasing pressure to adopt many of the attributes associated . . . with the private sector (2000: 42).

There are of course both pluses and minuses for disaster planning and crisis managing to go in this direction. But we are just at the start of this tendency. While there are reasons to think that the privatization to some extent will occur, how much is an open question. If so, we should be alert for this possible movement in the next decade or so and its implication for planning and managing. At the very least, it seems obvious that we are not going to run out of interesting questions and issues very soon with regard to how human beings collectively organize themselves to deal with crises.

BIBLIOGRAPHY

- Adam, Barbara, Ulrich Beck and Joost Van Loon (eds.) 2000. The Risk Society and Beyond: Critical Issues for Social Theory. Thousand Oaks, CA. : Sage.
- Aguirre, B. 1993. Planning, warning, evacuation, and search and rescue: A review of the social science research literature. Pp. 210-240 in Quarantelli, E.L. and K. Popov (eds.) Proceedings of the United States-Former Soviet Union Seminar on Social Science Research on Mitigation for and Recovery From Disasters and Large Scale Hazards. Volume I: The American Participation. Newark, DE. : Disaster Research Center, University of Delaware.
- Aguirre, B. 1994. Collective behavior and social movement theory. Pp. 257-272 in Russell Dynes and Kathleen Tierney (eds.) Disasters, Collective Behavior and Social Organization. Newark, DE. : University of Delaware Press.
- Aguirre, B., E. L. Quarantelli and J. Mendoza. 1988. The collective behavior of fads: Characteristics, effects and career of streaking. American Sociological Review 53: 569-584,
- Anderson, William. 1969. Local Civil Defense in Natural Disaster: From Office to Organization. Newark, DE. : Disaster Research Center, University of Delaware.
- Anderson, William. 1970. Military organizations in natural disaster: Established and emergent norms. American Behavioral Scientist 13: 415-422.
- Baldi, Brunetta. 1995. Emergency preparedness policy-making: A comparative analysis between California and Italy. Preliminary Paper # 232. Newark, DE. : Disaster Research Center, University of Delaware.
- Barton, Allen. 1970. Communities in Disasters: A Sociological Analysis of Collective Stress Situations. New York: Doubleday Anchor.
- Bates, F. 1989. Problems in the cross cultural measurement of disaster impact and recovery. Pp. 209-225 in E. L. Quarantelli and Carol Pelanda (eds.) Proceedings Italy-United States Seminar: Preparations for, Responses to, and Recovery from Major Community Disasters. Newark, DE. : Disaster Research Center, University of Delaware.
- Bates, F. and C. Pelanda. An ecological approach to disasters. Pp. 145-159 in R. Dynes and K. Tierney (eds.) Disasters, Collective Behavior and Social Organization. Newark, DE. : University of Delaware Press.
- Battisti, Francesco. 1978. Disasters and social change in Italy. Unpublished paper.
- Battisti, Francesco (ed.). 1991. La Citta e L'emergenza: Organizzazione della Protezione Civile e Pianificazione della Sicurezza nelle Aree Metropolitane. Milan, Italy: Franco Angel. (in Italian and English).
- Beck, Ulrich. 1992. Risk Society: Towards a New Modernity. Thousand Oaks, CA. : Sage.
- Beck, Ulrich. 1995. Ecological Politics in an Age of Risk. Cambridge: Polity.
- Blanchard, B. W. 1984. American Civil Defense 1945-1984: The Evolution of Programs and Policies. Emmitsburg, MD.: FEMA.
- Blumer, Herbert. 1969. Fashion: From class differentiation to collective selection. Sociological Quarterly 10: 275-291.
- Bolton, Patricia. 1986. Natural hazards and industrial crises: Emergency management considerations. Unpublished papers.

- Bowman, Marilyn. 1997. Individual Differences in Posttraumatic Response: Problems With the Adversity-Distress Connection. Mahwah, N.J.: Lawrence Erlbaum.
- Britton, Neil. 1991a. Constraints of effectiveness in disaster management. Canberra Bulletin of Public Administration 64: 54-66.
- Britton, Neil. 1991b. Organizational and community response to a Technological Emergency: Case Study of a Major Incident Within a Metropolitan Australian City. Armidale: Centre for Disaster Management, University of New England-Armidale.
- Caplow, T., H. Bahr and B. Chadwick. 1984. Analysis of the Readiness of Local Communities for Integrated Emergency Planning. Charlottesville, VA.: United Research Services.
- Carr, L. 1932. Disasters and sequence-pattern concept of social change. American Journal of Sociology 38: 207-218.
- Chandessais, Charles. 1964. The civil protection organization in France. Unpublished paper.
1985. Civil Defence in Singapore 1939-1984. Singapore: Singapore Civil Defence Force.
1995. Civil Defense of the Czech Republic. Prague, Czech Republic: Ministersivo Obrany Cr. (in Czech and English)
- Cutter, Susan. American Hazardscapes: The Regionalization of Hazards and Disasters. Washington, D.C.: Joseph Henry Press.
- Cutter, Susan. (ed.) Environmental Risks and Hazards. Englewood Cliffs, N.J.: Prentice Hall. 1994.
1967. The Development of Civil Preparedness in the US: A Chronological Summary. Battle Creek, MI.: Region 4 DCPA.
1994. Disaster Prevention in Japan. Tokyo, Japan: Infrastructure Development Institute.
- Douglas, Mary and Aaron Wildavsky. 1983. Risk and Culture: An Essay on Selection of Technological and Environmental Dangers. Berkeley, CA. : University of California Press.
- Drabek, Thomas. 1986. Human System Responses to Disaster: An Inventory of Sociological Findings. New York: Springer Verlag.
- Drabek, Thomas. 1994. Disaster in Aisle 13 Revisited. Pp. 26-44 in Russell R. Dynes and Kathleen Tierney (eds.) Disasters, Collective Behavior, and Social Organization. Newark, DE. : University of Delaware Press.
- Drabek, Thomas and Gerard Hoetmer (eds.) 1991. Emergency Management: Principles and Practice for Local Government. Washington, D.C.: International City Management Association.
- Drabek, Thomas, Alvin Mushkatel and Thomas Kilijanek. 1983. Earthquake Mitigation Policy: The Experience of Two States. Boulder, CO.: Institute of Behavioral Science, University of Colorado.
- Durkheim, Emil. 1955. The Elementary Forms of Religious Life. N.Y.: Free Press.
- Dye, Vincent. 1995. La Securite Civile en France. Paris, France: Presses Universitaires de France. (in French)
- Dynes, Russell R. 1994. "Community emergency planning: False assumptions and inappropriate analogies," International Journal of Mass Emergencies and Disasters 12: 141-158.

- Dynes, Russell R. 1995. Preparedness planning: The adequacy of assumptions about social organization. Journal of Japan Society of Information and Knowledge 5: 23-38.
- Dynes, Russell R. 1999. The dialogue between Voltaire and Rousseau on the Lisbon earthquake: The emergence of a social science view. Preliminary Paper # 294. Newark, DE. : Disaster Research Center, University of Delaware.
- Dynes, Russell R. and E. L. Quarantelli. 1977. The Role of Local Civil Defense in Disaster Planning. Newark, DE.: Disaster Research Center, University of Delaware.
- Dynes, Russell R. and Kathleen Tierney (eds.) 1994. Disasters, Collective Behavior and Social Organization. Newark, DE. : University of Delaware Press.
- Dynes, R., B. De Marchi and C. Pelanda (eds.) 1987. Sociology of Disasters: Contributions of Sociology to Disaster Research. Milan, Italy: Franco Angeli.
- Dynes, R. E. L. Quarantelli and Dennis Wenger. 1990. Individual and Organizational Response to the 1985 Earthquake in Mexico City. Newark, DE. : Disaster Research Center, University of Delaware.
- Egorov, P. T. 1976. Civil Defense: A Soviet View. Washington, D.C.: US Air Force.
1983. Emergency Management, Baseline Data Reports V-15 No. 4. Washington, D.C.: The International City Management Association.
1987. Forever revising: The DSM process. Psychology Today 21: 56
- Frederick, Calvin. 1995. National Institute of Mental Health and other Federal support. PP. 218-222 in A. S. Kalayjian Disaster and Mass Trauma: Global Perspectives on Post Disaster Mental Health Management. Long Branch, N.J.: Vista Publishing.
- Glenarther, Lord. 1986. Ministerial address. Journal of the Institute of Civil Defence 49:6-9.
- Goure, Leon. 1986. Civil Defense in the Soviet Union. Westport, CT.: Greenwood Publishers.
1995. The Great Hanshin-Awaji (Kobe) Earthquake in Japan. Geneva: Department of Humanitarian Affairs.
- Green, Bonnie. 1994. Psychosocial reaction in traumatic stress: An update. Journal of Traumatic Stress 7: 341-351.
- Handmer, John. 2000. Are emergency services becoming private? Australian Journal of Emergency Management 15: 42-46.
- Auf der Heide, E. 1989. Disaster Response. Principles of Preparation and Coordination. St. Louis, MO.: Mosby.
- Hoetmer, G. 1984. Interorganizational relationships in emergency management. Unpublished paper.
- Hurley, John J. Chronology of Some Significant Events in U.S. Civil Defense. Washington, D.C.: Department of Health, Education and Welfare.
- Kalayjian, A. S. 1995. Disaster and Mass Trauma: Global Perspectives on Post-Disaster Mental Health Management. Long Branch, N.J.: Vista Publishing.
- Kartez, Jack. 1984. Crisis response planning: Toward a contingent analysis. Journal of the American Planning Association 50: 9-21.

- Kartez, Jack and Michael Lindell. 1987. Planning for uncertainty: The case of local disaster planning. Journal of the American Planning Association 53: 487-498.
- Kartez, Jack and William Kelley. 1988. Research-based disaster planning: Conditions for implementation. In Louise Comfort (ed.) Managing Disaster: Strategies and Policy Perspectives. Durham, N.C.: Duke University Press.
- Kartez, Jack, William Kelley and Michael Lindell. 1987. Adaptive Planning for Community Emergency Management: A Summary for Public Managers. Pullman, WA. : Environmental Research Center, Washington State University.
- Kreimer, Alcira and Mohan Munasinghe (eds.) 1991. Managing Natural Disasters and the Environment. Washington, D.C.: The World Bank.
- Kreps, Gary. 1984. Sociological inquiry and disaster research. Annual Review of Sociology 10: 309-330.
- Kreps, Gary. 1990. The federal emergency management system in the United States: Past and present. Unpublished paper.
- Kreps, Gary. 1991. Organizing for emergency management. Pp. 30-54 in Thomas E. Drabek and Gerard J. Hoetmer (eds.) Emergency Management: Principles and Practice for Local Government. Washington, D.C.: International City Management Association.
- Lang, Bernhard. 1985. Non-semitic deluge stories and the Book Of Genesis. A bibliographical and critical survey. Anthropos 80: 605-616.
- Lofland, J. 1992. Collective behavior: The elementary forms. Pp. 447-481 in M. Rosenberg and R. Turner (eds.) Social Psychology: Sociological Perspectives. New Brunswick, N.J.: Transaction.
- Lonnie, W.S. 1968. Civil Defence and Emergency Services: Report on Studies Made During Overseas Visit. Perth, Australia: Alex Davies.
- Malone, Willie. 1993. Research definition and location of research: A user's view. International Journal of Mass Emergencies and Disasters 11: 63-74.
- McCarthy, John and Mark Wolfson. 1992. Consensus movements, conflict movement, and the cooptation of civic and state infrastructures. Pp. 273-283 in Aldon Morris and Carol Mueller (eds.) Frontiers in Social Movement Theory. New Haven, CT.: Yale University Press.
- McLoughlin, D. 1985. A framework for integrated emergency management. Public Administration Review 45: 165-172.
- Mileti, Denis. 1999. Disaster by Design: A reassessment of natural hazards in the United States. Washington, D.C.: Joseph Henry Press.
- Myers, Mary Fran. 1993. Bridging the gap between research and practice: The Natural Hazards Research and Applications Information Center. The International Journal of Mass Emergencies and Disasters 11: 41-54.
- Neal, David. 1993. Integrating disaster research and practice: An overview of issues. International Journal of Mass Emergencies and Disasters 11: 5-13.
1994. Network of European Specialised Centres. Strasbourg: Council of Europe.
- Nigg, Joanne. 1993. Disaster recovery: A social process. Pp. 258-269 in E.L. Quarantelli and Konstantin Popov (eds.) Proceedings of the United States-Former Soviet Union Seminar on Social Science Research on Mitigation for and Recovery

From Disasters and Large Scale Hazards, Volume I: The American Participation. Newark, DE. : Newark, DE. : Disaster Research Center, University of Delaware.

1978. 1978 Emergency Preparedness Project; Final Report. Washington, D.C.: National Governors' Association.

Norton, Clark. 1979. Emergency and Disaster Preparedness Reorganization. Washington, D.C.: Congressional Research Service, Library of Congress.

1962. An overview of the organizational history of federal civil defense in the United States. Unpublished paper.

Pelanda, Carlo. 1981. Disaster e vulnerability sociosistemica. Rassegna Italiana di Sociologia 22: 507-532. (in Italian)

Perrow, Charles. 1984. Normal Accidents; Living with High-Risk Technologies. N.Y.: Basic Books.

Perry, Ronald. 1982. The Social Psychology of Civil Defense. Lexington, MA: D.C. Heath.

Perry, Ronald. 1985. Comprehensive Emergency Management: Evacuating Threatened Populations. Greenwich, CT.: JAI Press.

Perry, Ronald 1991. Pp. 201-223 in T. Drabek and G. Hoetmer (eds.) Emergency Management: Principles and Practice for Local Government. Washington, D.C.: International City Management Association.

Petak, William. 1993. A survey of disaster mitigation research in the United States. Pp. 156-209 in E. L. Quarantelli and Konstantin Popov (eds.) Proceedings of the United States-Former Soviet Union Seminar on Social Science Research on Mitigation for and Recovery From Disasters and Large Scale Hazards, Volume I: The American Participation.

Porfiriev, Boris. 1998. Disaster Policy and Emergency Management in Russia. N.Y.: Nova Science Publishers.

Prince, S. 1920. Catastrophe and Social Change. N.Y. Columbia University Press.

Quarantelli, E. L. 1984. The preparation of citizen groups for earthquakes: The atypical nature of such groups and the conditions for their emergence. Pp. 901-908 in Proceedings of the Eight World Conference on Earthquake Engineering Volume 7. Englewood Cliffs, N.J.: Prentice Hall.

Quarantelli, E. L. 1985a. An assessment of conflicting views on mental health: The consequences of traumatic events. Pp. 173-215 in C. R. Figley (ed.) Trauma and Its Wake: The Treatment of Post-Traumatic Stress Disorder. N.Y.: Brunner/Mazel.

Quarantelli, E. L. 1985b. The Functioning of the Local Emergency Services Offices in Disasters. Newark, DE. : Disaster Research Center, University of Delaware.

Quarantelli, E. L. 1987. An analysis of the social historical factors affecting the development of research in the area. International Journal of Mass Emergencies and Disasters 5: 285-310.

Quarantelli, E. L. 1988. Local emergency management agencies: Research findings on their progress and problems in the last two decades. Preliminary Paper # 126. Newark, DE. : Disaster Research Center, University of Delaware.

Quarantelli, E. L. 1991. Disaster response: Generic or agent-specific? Pp. 97-105 in A. Kreimer and M. Munasinghe (eds.) Managing Natural Disasters and the Environment. Washington, D.C.: The World Bank.

Quarantelli, E. L. 1992. The case for a generic rather than agent specific agent approach to disasters. Disaster Management 2: 191-196.

- Quarantelli, E. L. 1993. Community crises: An exploratory comparison of the characteristics and consequences of disasters and riots. Journal of Contingencies and Crisis Management 1: 67-78.
- Quarantelli, E. L. 1994. Disaster studies: The consequences of the historical use of a sociological approach in the development of research. International Journal of Mass Emergencies and Disasters 12: 25-49.
- Quarantelli, E. L. 1995a. Draft of a sociological research agenda for the future: Theoretical, methodological and empirical issues. Preliminary Paper # 228. Newark, DE. : Disaster Research Center, University of Delaware.
- Quarantelli, E. L. 1995b. The future is not the past repeated: Projecting disasters of the 21st Century from present trends. Preliminary Paper # 229. Newark, DE. : Disaster Research Center, University of Delaware.
- Quarantelli, E. L. 1996. Emergent behaviors and groups in the crisis time of disasters. Pp. 47-68 in Kian Kwan (ed.) Individuality and Social Control: Essays in Honor of Tamotsu Shibutani. Greenwich, CT.: JAI Press.
- Quarantelli, E. L. 1997. Ten criteria for evaluating the management of community disasters. Disasters 21: 39-56.
- Quarantelli, E. L. (ed.) 1998. What Is a Disaster? Perspectives on the Question. London: Routledge.
- Quarantelli, E. L. and Carlo Pelanda (ed.) 1989. Proceedings of the Italy-United States Seminar on Preparations for Responses to and Recovery From Major Community Disasters. Newark, Delaware: Disaster Research Center, University of Delaware.
- Quarantelli, E. L. and Alla Mozgovaya (eds.). 1994. An Annotated Inventory of the Social Science Research Literature on Disasters in the Former Soviet Union and Contemporary Russia. Newark, DE. : Disaster Research Center, University of Delaware.
- Raphael, Beverley. 1986. When Disaster Strikes: How Individuals and Communities Cope With Catastrophe. N.Y.: Basic Books.
- Robertson, J. W. 1907. Earthquake shock considered as an etiological factor in the production of mental and nervous diseases. California State Journal of Medicine 5: 132-134.
- Robins, Lee N. 1990. Steps toward evaluating post-traumatic stress reaction as a psychiatric disorder. Journal of Applied Social Psychology 20: 1674-1677.
- Robinson, Cyril. 1994. Police in Contradiction: The Evolution of the Police Function in Society. Westport, CT.: Greenwood.
- Rosenthal, U., M. T. Charles and P. T. Hart (eds.) 1989. Coping With Crises. The Managing of Disasters, Riots and Terrorism. Springfield, IL. : Charles C. Thomas.
- Scanlon, Joseph. 1982. The roller coaster story of civil defence planning in Canada. Emergency Planning Digest 9: 2-14.
- Scanlon, Joseph. 1995. Federalism and Canadian emergency response: Control, co-operation and conflict. The Australian Journal of Emergency Management 10: 18-24.
- Schnitter, N. 1994. A History of Dams. Brookfield, VT. : Balkema.
- Smith, Dennis. 1978. History of Firefighting in America: 300 Years of Courage. N.Y.: Dial Press.

- Sorokin, P. 1942. Man and Society in Calamity: The Effects of War, Revolution, Famine and Pestilence Upon the Human Mind. N.Y.: Dutton.
2000. Special Focus Issue: The Future. Expanding the Boundaries of emergency management. IAEM Bulletin 17: 1-24.
- Stallings, Robert. 1995. Promoting Risk Construction: The Earthquake Threat. N.Y.: Aldine De Gruyter.
- Stallings, Robert and E. L. Quarantelli. 1985. Emergent citizen groups and emergency management. Public Administration Review 45: 93-100.
- Steinberg, Ted. 2000. Acts of God: The Unusual History of Natural Disasters in America. Oxford: Oxford University Press.
- Stierlin, E. 1909. Über Psycho-Neuropathischen Folgezustände bei den Überlebenden der Katastrophe von Courrieres an 10 März 1906. Zurich, Switzerland: University fo Zurich.
- Stoffel, Robert. 1994 The EOC/ICS connection. NCCEM Bulletin 28-32.
- Sylves, R.T. 1991. Adopting integrated emergency management in the United States: Political and organizational challenges. International Journal of Mass Emergencies and Disasters 9: 413-424.
- Sylves, R. T. and W. L. Waugh (eds.) 1996 Disaster Management in the United States and Canada. Springfield, IL.: Charles C. Thomas.
- Tedeschi, R., C. Park and L. Calhoun (eds.) 1998 Posttraumatic Growth. Mahwah, N.J.: Lawrence Erlbaum.
- Tierney, Kathleen. 1980. A Primer for Preparedness for Acute Chemical Emergencies. Newark, DE. : Disaster Research Center, University of Delaware.
- Tierney, Kathleen, Michael Lindell and Ronald Perry. 2000. Facing the Unexpected: Disaster Preparedness and Response in the United States. Washington, D.C.: Joseph Henry Press.
- Towfighi, Parvig. 1991. Integrated planning for natural and technological disasters. Pp. 106-1110 in A. Kreimer and M. Munasinghe (eds.) Managing Natural Disasters and the Environment. Washington, D.C.: The World Bank.
- U.S. General Accounting Office. 1991. Disaster Assistance: Federal, State, and Local Responses to Natural Disasters Need Improvement. Washington, D.C.: General Accounting Office.
- Vale, Lawrence. 1987. The Limits of Civil Defense in the USA, Switzerland, Britain and the Soviet Union. N.Y.: St. Martin's Press.
- Vorobiev, Y. L. 1998. Disasters and Man. Moscow, Russia: AST-LTD Publishers.
- Wakefield, Jerome. 1992. Disorder as harmful dysfunction: A conceptual critique of *DSM-III-R* Definition of Mental Disorder. Psychological Review 99: 232-247.
- Waugh, William. Living With Hazards. Dealing with Disasters. An Introduction to Emergency Management. Armonk, N.Y.: M. E. Sharpe. 2000.
- Waterbury, John. 1979. Hydropolitics of the Nile Valley. Syracuse: Syracuse University Press.

Wenger, Dennis, E. L. Quarantelli and Russell Dynes. 1986. Disaster Analysis: Emergency Management Offices and Arrangements. Newark, Delaware: Disaster Research Center, University of Delaware.

Wildavsky, Aaron. 1988. Searching for Safety. New Brunswick, N.J.: Transaction Books.

Yamamoto, Yasumasa and E. L. Quarantelli. 1984 Inventory of the Japanese Disaster Research Literature in the Social and Behavioral Sciences. Newark, DE. : Disaster Research Center, University of Delaware.